Volume 3, No. 2, Fall 2000

Noxious Times

A quarterly publication of the California Interagency Noxious Weed Coordinating Committee

In this issue...

Senate Bill 1740:

$5 Million Weed Control Funding Bill – Signed by Governor Davis!

On September 2nd, 2000 in Fresno CA, Governor Gray Davis signed Senate Bill 1740, authored by Senator Tim Leslie. This Bill adds 5 million dollars to the Noxious Weed Management Account in the California Department of Food and Agriculture (CDFA) Fund. There was widespread support for the Bill amongst a variety of agricultural groups, local government, conservation organizations and others. The Regional Council of Rural Counties, which sponsored the bill, did a thorough job of coordinating supporters.

This money will be spent over the next few years on noxious and invasive weeds as follows:

- $ 85% Will be allocated in the form of grants/ contracts for control, mapping, and education by County Weed Management Areas (WMA) and County Agriculture Departments
- $ 10% Will support research for noxious weeds
- $ 5% Will support CDFA with implementation of the bill, coordination and training of WMAs

The program plan will be completed over the next two months and proposals will be solicited at that time. To find out more about the program contact your local WMA or Ag Commissioner. To find out more about WMAs visit the WMA web-site at www.cdfa.ca.gov/wma

To see a copy of the bill go to:

http://www.leginfo.ca.gov/pub/bill/sen/sb_1701-1750/sb_1740_bill_20000907_chaptered.html

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Joe Balciunas (510) 559-5975
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Joe DiTomaso (530) 754-8715

California Statewide Weed Management Area (WMA) 2nd Annual Meeting

On October 24, 2000 the 2nd Annual Weed Management Area* Meeting will be held at the Heidrick Agricultural History Center in Woodland from 8:00am – 5:00pm. This meeting is an opportunity to hear presentations on the evolution of the WMA program, share success stories, discuss challenges, and foster enthusiasm and collaboration among the different groups. At least one representative from each WMA is to attend as stated in Assembly Bill 1168, but more are welcome.

Please contact Jennifer Drewitz (jdrewitz@cdfa.ca.gov) or Steve Schoenig (sschoenig@cdfa.ca.gov) at (916) 654-0768 to reserve seats for the attendees from your WMA.

Agenda for Annual Meeting

8:00am-8:15am	Introduction
8:15am-9:15am	Mapping (applications to management, yellow starthistle leading edge project update, data collection)
9:15am-10:15am	Education and awareness
10:15am-10:30am	Break
10:30am-11:30am	Planning (strategic planning and work plans)
11:30am-12:30pm	Lunch
12:30pm-1:30pm	Funding (Assembly Bill 1168/Senate Bill 1740 updates, proposal development tips, evaluating projects, WMA accounting)
1:30pm-2:30pm	Maximizing success through charismatic leadership
2:30pm-2:45pm	Discussion of regional groups
2:45pm-3:45pm	Regional breakouts** (project sharing)
3:45pm-4:45pm	Project breakouts** (mapping, brochures, K-12 education, cooperative control projects, strategic planning)
4:45pm-5:00pm	Open

**Weed Mangement Areas (WMAs) are local organizations that bring together landowners and managers (private, city, county, State, and Federal) in a county, multi-county, or other geographical area to coordinate efforts and expertise against common invasive weeds species.*

***Breakouts = small group discussion.*

Noxious Times is a publication of the California Interagency Noxious Weed Coordinating Committee. The committee was formed in 1995 when 14 federal, state, and county agencies came together under a Memorandum of Understanding to coordinate the management of noxious weeds. The committee's mission is to facilitate, promote, and coordinate the establishment of an Integrated Pest Management partnership between public and private land managers toward the eradication and control of noxious weeds on federal and state lands and on private lands adjacent to public lands.

The *Noxious Times* newsletter intends to help the committee achieve its goals of coordination and exchange of information by providing land managers throughout the state with information on weed control efforts, news, and successes.

The *Noxious Times* newsletter does not specifically endorse tools, products, or other materials reported here, rather strives to provide baseline data that will lend towards further esmaination and research on the part of the potential user.

Noxious Times is published quarterly by staff of the Integrated Pest Control Branch at the California Department of Food and Agriculture. We welcome submissions for our upcoming issues. Please send to: CA Department of Food and Agriculture, ATTN: Noxious Times, 1220 N Street, Room A-357, Sacramento, CA 95814 or e-mail: noxtimes@cdfa.ca.gov

If you have a colleague whose name you would like to add to our mailing list, please send mailing information to the address above.

Noxious Times Editorial Staff: Julie Garvin, Carri Benefield, Steve Schoenig, Patrick Akers and Jennifer Drewitz. Text written by staff unless otherwise noted.

The Development of the National Invasive Species Management Plan

By: Patrick Akers, California Department of Food and Agriculture

When President Clinton, February 3rd, 1999, issued Executive Order (EO) 13112 concerning invasive species, one of his major objectives was the creation of a National Invasive Species Management Plan. While those of us involved in weeds tend to be absent-minded about other troublesome creatures, the Plan is intended to address members of all taxa, possibly including human pathogens. The intent for the Plan is that it will be a dynamic, evolving document. The first edition is due out late this year and will be a more general, strategic document, outlining broader goals and methods. The EO directs that a second edition will appear two years after the first and will be a more tactical document, including specific projects and the means to accomplish them. Drafts of the Plan, as well as other national information on invasive species, can be found at a new web site: www.invasivespecies.gov. A preliminary draft of the Plan itself may be found at www.invasivespecies.gov/council/nisc/main.html.

A series of steps are leading to the development of the Plan. The EO first created the National Invasive Species Council (NISC), to oversee the development and implementation of the Plan. Next the EO designated seven cabinet Secretaries and the head of the EPA as its members, with the Secretaries of Interior and Agriculture acting as co-chairs. The NISC then created a second group, the Invasive Species Advisory Committee (ISAC), to gather information and suggestions for inclusion in the plan, and to oversee its drafting (ISAC is composed of 32 members, all non-federal, representing a broad spectrum of interested and knowledgeable parties). ISAC then outlined six major areas for development and created a Working Group to address each area. ISAC asked some 245 knowledgeable persons to participate in the Working Groups, including persons with federal affiliations this time.

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Saltcedar Consortium Receives $3 Million Grant for Biological Control

The Saltcedar Consortium participated in a call for proposals with the hope of receiving funding in the USDA-CSREES Initiative for Future Agriculture Food Systems (IFAFS). The Consortium successfully competed for a new 4-year project funded at $3,000,000 that will explore biologically-based control of **saltcedar, arundo and yellow starthistle**. The proposal was submitted by a team of nearly 30 members of the Consortium from a wide range of supporting agencies including USDA-ARS, USDA-APHIS, Bureau of Reclamation, US Fish and Wildlife Service, the Nature Conservancy, three state Departments of Agriculture and several universities.

Saltcedar, arundo and yellow starthistle are exotic invasive plants that negatively affect several western states. They out-compete beneficial vegetation, and often form dense monotypic stands. They provide poor habitat for other flora and fauna, are excessive water consumers, increase fire, and alter ecosystems to further favor their growth and development over desirable species. The presence of these weeds threatens the economic viability of agriculture and the sustainability of many natural habitats. This consortium received funding for research and demonstration activities that will address the following tasks:

(1) Development of new benefit/risk evaluation methods for biological control agents used to combat invasive plant species in sensitive environments

(2) Area-wide and ecosystem level research on the impact of target weeds and optimizing the effects that biological and other integrated methods of control have on beneficial flora, fauna and physical aspects of the environment

(3) Area-wide assessments of invasive species impact, implementation of biological control release and evaluation, natural enemies impact assessment, and evaluation of other weed control methods

This effort will use a team-approach that includes scientists, land managers, economists, and risk analysts from state, federal and private groups. The Consortium will provide expertise across disciplines, and employ methodologies from basic research to area-wide implementation and evaluation. The program will be managed using a combination of institutional planning, consortium oversight and Cooperative Extension facilitation of project deliverables. Overall, this project will develop control options for invasive plants that will be implemented on government, private and Native American lands.

The project will be managed by USDA-ARS out of Albany, CA, but includes research and implementation activities in CA, CO, NV, TX, UT and WY. ❖


Yellow starthistle

First Things First: M Regulations Don't D Weed P

By: Joel Trumbo, Pesticide Use C

The battle against invasive weeds depends on the wise use of several different control methods. In most instances, an integrated control program for invasive weeds will include herbicide use, as well as non-chemical methods. Before you strap on your backpack sprayer, make sure that you have addressed the following pesticide use issues.

State and County Pesticide Use Regulations

From crop production to structural pest control, pesticide use in California is strictly regulated. While few would disagree that invasive weed control is an important undertaking, invasive weed control projects are not exempt from the regulatory requirements of the California Department of Pesticide Regulation (DPR). At the local level, the county agricultural commissioners have the front-line authority for making sure DPR pesticide regulations are enforced.


Scotch Thistle

For that reason, those planning an invasive weed control project should first contact the local county agricultural commissioner's office (CAC) (*see Noxious Times, Vol. 3, No. 1, page 11 for list of CAC telephone numbers or www.cdfa.ca.gov/counties*). The CAC can provide valuable information about requirements such as operator identification numbers, restricted material permits, pesticide use recommendations and pesticide use reports. For the majority of invasive weed projects, these "paperwork" requirements are not complicated or time consuming. However, neglecting to contact the CAC early in the planning process can result in enforcement actions by the county and delays in getting valuable control projects started.

A Word About Training

Federal and state pesticide regulations require that employees be provided with pesticide safety training. The training must include basic information on pesticide use and handling techniques, pesticide health hazards, routes of applicator exposure, and other important information. The training program should include reviews of herbicide product labels and material safety data sheets (MSDS). The training must be completed before the employee handles pesticide products and


Tamarisk

must be repeated annually. Employers must also keep records of pesticide safety training for two years from the date the training is provided. Specific questions about training requirements can be addressed to the CAC.

Endangered Species

Habitat loss is the primary reason plant and animal species become endangered. With a rate of invasion that is greater than 4,500 acres per day[1], invasive weeds play a significant role in habitat destruction in the western United States. In spite of this alarming statistic, invasive weed project coordinators need to remember that, if used improperly, herbicides can actually harm the very species that they are being used to protect. To address this issue, the California Department of Pesticide Regulation has developed a series of use bulletins. These county-specific bulletins provide pesticide users with strategies to help reduce pesticide risks to federally-listed threatened and endangered

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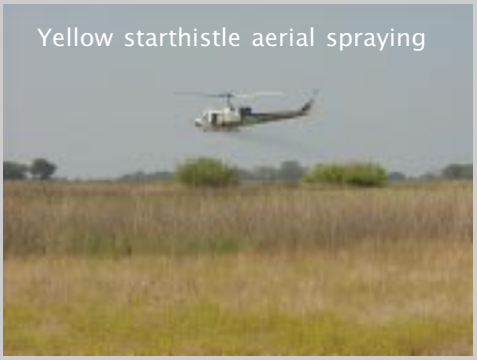
Coordinator for Cal Fish & Game


Yellow starthistle aerial spraying

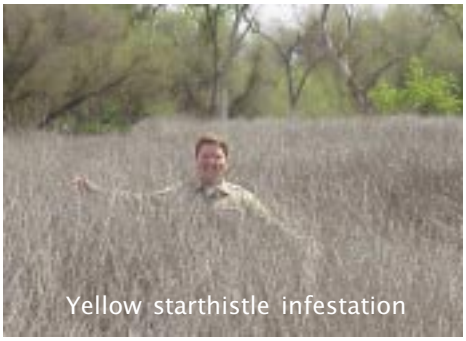
species. The county bulletins are the product of a cooperative effort by the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service and various state regulatory and environmental agencies, including DPR, the California Department of Food and Agriculture, the CACs and the California Department of Fish and Game. Currently, mitigation measures are voluntary, but eventually, following the bulletins will be a legal requirement. Copies of bulletins for each California county can be obtained from local CAC offices or can be found at the DPR web-site www.cdpr.ca.gov.

Working with the California Department of Fish and Game

Invasive species project coordinators need to be aware of three basic issues with respect to the California Department of Fish and Game (DFG): (1) notification requirements for aquatic herbicides; (2) state-listed threatened and endangered species; and (3) lake or streambed alteration agreements. Specific information about these issues can be obtained by contacting your regional DFG office. A listing of DFG regional offices can be obtained by calling (916) 653-7664 or by visiting the DFG web-site at www.dfg.ca.gov.

Some aquatic herbicides have a general requirement to "consult with local state fish and game agency authorities before applying the product to water." While the DFG doesn't have a specific consultation process for aquatic herbicide use, it is important for the applicator to comply with this label requirement. In most cases, a telephone call to the Environmental Services supervisor in the regional DFG office will satisfy this requirement.

Like the federal government, California maintains its own list of threatened and endangered plants and animals. In some cases, a species may have both federal and state listing. In any case, it is important that these species be protected from harm due to invasive species control measures, including herbicide use. Usually, small-scale herbicide use to control invasive weeds won't present much of a hazard to listed species. However, under some circumstances, such as large scale projects or projects that are directly within the habitats of listed species, coordination with the regional DFG office may be necessary. Fortunately, the control measures that have been developed by DPR for the federal threatened and endangered species bulletins (www.cdpr.ca.gov) can also be used to provide protection for state listed species.


Yellow starthistle infestation

Persons that propose projects that may substantially alter the natural flow or substantially change the bed, channel, or bank of any waterway must obtain a lake or streambed alteration agreement from DFG. In most cases, the selective removal of invasive weeds in riparian or aquatic settings will not involve the substantial alteration of waterways. In some cases, such as large-scale giant cane or tamarisk removal projects, a streambed alteration agreement may be necessary. Detailed information on lake or streambed alteration agreements can be obtained from regional DFG offices. A listing of DFG regional offices can be obtained by calling (916) 653-7664 or by visiting the DFG web-site at www.dfg.ca.gov.

Using herbicides properly means making certain that you have complied with all applicable federal, state and local requirements. Following all the rules will help ensure the continued availability of herbicide products for the battle against the non-native species that threaten our native plant, fish and wildlife. ❖

[1]United States Department of the Interior. January 1996. Partners Against Weeds. Final Action Plan for the Bureau of Land Management. Billings, Montana.

Caulerpa: the Newest Aquatic Threat

By: Lars Anderson, USDA-ARS Exotic and Invasive Weed Research, Davis, CA.
Chair, SCCAT Technical Advisory Team

June 12th, 2000 may not evoke any memorable images or remind you of an historic event- until now. This was the day that Rachel Woodfield of Merkel & Associates, while conducting some routine surveys of eelgrass populations in Agua Hedionda Lagoon in Carlsbad, CA, noticed the distinctively bright green appearance of *Caulerpa taxifolia*. Fortunately, Rachel suspected that this plant was an interloper and immediately sent samples to UC Berkeley's Jepson Herbarium for confirmation. Within days of the discovery, key state and federal agencies were alerted and the first of a series of meetings of the Southern California Caulerpa Action Team (SCCAT) began. In less than a month from the June 12th sighting the first operations to eradicate this aggressive, tropical non-native were started. As of now, all colonies have been isolated by anchored PVC tarps, treated with chlorine (or in a few cases, acetic acid), and the surveys of adjacent areas within Agua Hedionda are complete.

The remarkable swiftness of this response stems from several fortuitous circumstances. First, the staff at Merkel & Associates, who were conducting an eelgrass restoration project, knew of the devastating results of the *Caulerpa taxifolia* spread along the Mediterranean coast, which began in 1984. Second, the key agency representatives were also very aware of the threat due to press and video documentation of the Mediterranean situation in recent years. Third, by providing direct support and participation, Cabrillo Power (the electrical utility located on the lagoon) enabled operations to begin almost immediately. Finally, the regulatory, action, and research agencies pulled together,


Caulerpa taxifolia

continued on page 14...

Kudzu on the Loose in Oregon

Kudzu (*Pueraria lobata*), a climbing vine, is such a threat to native vegetation that the shipment of the plant or part of the plant into or within the U.S. is strictly prohibited. This fast-growing, large-leafed vine was originally brought into the United States in 1876 by Japanese representatives attending the Philadelphia Centennial Exposition. This purple-flowering exotic was later planted in home gardens as an ornamental, used as forage for livestock, and planted along roadsides to prevent soil erosion. Kudzu spread quickly and became naturalized across much of the Southeast.


Kudzu vine engulfing trees

Kudzu spreads at an alarming rate of 120,000 acres annually in the U.S., causing millions of dollars of damage to buildings, machinery, power lines, native flora and fauna, as well as forest and farmland. As kudzu climbs and spreads it completely engulfs and chokes out all pre-existing vegetation, including plants in riparian and watershed areas. Its deep root system and rapid propagation make it extremely difficult to control. Kudzu may be impossible to entirely eradicate once firmly established in an area.

Recently, this green threat was been found in Oregon, the first recorded sighting west of Texas. Current investigations are underway by the Oregon Department of Agriculture's to determine the extent and source of the introduction. The infestation site appears relatively new, likely established in the last two to three years. Oregon and neighboring states have been asked to keep an eye out for new infestations and to call ODA's Weed Control Program at (503) 986-4621 to report any new or suspicious sightings. ❖

UPDATE: California Certified Weed-Free Hay and Straw Program

California Weed-free Feed and Straw Working Group forms

By: Joanna Clines, US Forest Service

Previous issues of the Noxious Times have described the initiation and progress of the weed-free forage and mulch program in California (Vol. 1, No. 2, Fall 1998: *Weed-free Forage Programs: Can they curb the spread of weeds in Wilderness?;* Vol. 2, No. 3, Winter 2000: Weed-*free Forage Moves toward a Reality in California;* and Vol. 3, No. 1, Summer 2000, p. 11 and 12). To briefly summarize, in 1998 agencies in California began taking steps towards making weed-free hay and straw widely available, without an undue increase in cost to the end-user. The current plan is to phase in the use of certified weed-free products by federal land management agencies (e.g. Forest Service, National Park Service, and Bureau of Land Management) over a 3-year period. The year 2001 would focus on intensive education. In 2002 the federal agencies would sign special orders restricting the use of anything but certified hay and straw, but people found violating the orders would receive only warnings. In 2003, full enforcement would be in effect. It is believed that the public land requirements (known as closure orders or special orders) are necessary not only to bring about effective prevention of weed spread, but also to give growers the incentive to get their fields certified by their local agricultural commissioner, knowing that a market for these products will exist.

Key Steps

In order for certified weed-free products to be made widely available, certain key steps must occur sequentially. The timing and order of these steps is crucial so that growers, balers, and retailers have assurance of a market for certified products, and end-users are aware and able to obtain products by the time restrictions are in place.

(1) Certification procedures need to be uniformly drafted across all 58 counties in California. This has been done, thanks to the Agricultural Commissioner of Plumas and Sierra Counties, Karl Bishop (*see Noxious Times Summer 2000, p. 12 for the final text of these guidelines*).

(2) The Forest Service and Bureau of Land Management need to conduct National Environmental Policy Act analysis (Environmental Assessments) for implementation of requirements for weed-free hay and straw.

(3) An intensive education campaign must be set forth to inform growers, balers, retailers, public land users, contractors for erosion control projects, and public land permit holders that these requirements will be in place by 2002.

(4) Special colored twine to identify the forage as weed free needs to be made available to county agricultural commissioners.

(5) In 2001, growers' fields are scheduled to receive certification. *In some areas certifications are already underway for 2000*.

(6) By late 2001 and early 2002, certified hay and straw will become available to retailers throughout California.

Increased Public Involvement

The proposed program is extensive and involves many stakeholders. As new parties joined the effort, the dialog continued to evolve, pushing the process further along. As the work group continues to work out the "nuts and bolts" of the program, education outreach to end-users will be critical.

Some equestrian members of the working group have taken the initiative to begin educating other equestrians about the CWFF program. A series of "Frequently Asked Questions" or "FAQ" and their answers can be found at www.foothill/net/tevis/cwff/cwff.htm, thanks to Richard Goodwin of the Western States Trail Foundation. Another web-site with great promise was created by Bonnie Davis, a freelance writer on equestrian issues, at www.weedfreefeed.com. The agencies are also in the process of posting information about this topic on the web. ❖

Center for Invasive Plant Management Established

The Center for Invasive Plant Management (CIPM) is a relatively new organization, regionally based with representatives from most western states and universities. The goal of CIPM is to increase the quality and quantity of invasive plant research, education, and management by stimulating and facilitating collaboration and cooperation among researchers, educators, and public and private land managers. The office is located at Montana State University. The Center is designed to bridge research, education, and project implementation, as regional, multidisciplinary proposals and programs are developed and implemented. Groups involved include federal and state agencies, research institutions, private landowners, wildlife and livestock organizations, environmental groups, amongst others. Previously groups worked independently with their own programs to address weed issues.

The primary function of the Center is to coordinate activities between its member groups, encourage activities that improve natural resources and protect environmental quality while facilitating economic and community well being. The Center also hopes to provide technology to facilitate communication between partners. It is hoped that effective linkages will be formed and strengthened between partners.

CIPM's **long-term objectives** are to provide a mechanism and impetus for prioritizing and developing regional invasive plant research and education programs. Some research, education and outreach objectives are to:

- Develop and implement programs to prevent the invasion and expansion of invasive plants and preserve existing native ecosystems.
- Improve the efficiency of international searches for biological control agents and their subsequent distribution.
- Enhance the use of sustainable grazing and grazing management for weed management.
- Develop and implement new methods for revegetating and restoring invasive plant-infested rangeland.
- Develop and implement awareness and educational programs for the general public.
- Provide help organizing local, regional, and national support from elected officials and policymakers.
- Help committees, task forces, and landowners meet their goals and objectives.
- Develop and test new curricula to nationalize academic and certification programs in ecologically-based invasive plant management.

The Center has **near-term objectives** as well that include evaluating research priorities, sponsoring symposia addressing high-priority issues, and developing and testing weed management strategies at the landscape scale. Their research, education and outreach objectives for the near-term are to:

- Define the invasion process for individual weeds or groups of weeds.
- Define the ecological and economic impacts of specific weeds.
- Improve our understanding of basic weed biology and ecology to improve our ability to manage weeds.
- Evaluate the efficiency of prevention and management strategies at both the plot and landscape scale.
- Develop an information clearinghouse.
- Develop and sponsor regional certification and training programs, working closely with existing federal, state, and local programs.
- Facilitate interdisciplinary workshops and symposia addressing invasive plants, and help publish and disseminate results.

This spring, CIPM was awarded a $500,000 start-up grant from the federal government. This grant is going to be used to further establish the CIPM office based at MSU, employ a director, and initiate programs identified and prioritized at a meeting in Salt Lake City in 1998. The **highest priorities** currently include invasive weed education, regional transfer systems between state workers and landowners, forming implementation teams, offering incentives to private landowners, and putting scientific information on-line. ❖

For more information please contact Janet Petroff, Acting Director of CIPM or Roger Sheley, Extension Weed Specialist at (406) 994-5686.

FICMNEW: A Federal Perspective on Weeds

The Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW) was established in May 1994 with the signing of a Memorandum of Understanding by 17 Federal Agencies. This committee was formed to develop a Federal, or national approach for noxious and exotic weed control. Members of the committee include representatives from: Agricultural Research Service, Agricultural Marketing Service, Animal and Plant Health Inspection Service, Cooperative State Research, Education and Extension Service, Forest Service, and Natural Resources Conservation Service from Department of Agriculture; Bureau of Indian Affairs, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, U.S. Geological Survey, and National Park Service from Department of the Interior; Department of Defense; Department of Energy; Environmental Protection Agency; Federal Highway Administration, and Department of Transportation.

FICMNEW works to:

- improve the federal government's ability to prevent, control and manage harmful non-indigenous plant species
- maintain and restore healthy ecosystems
- preserve biological diversity on Native American and Federal lands and waters, with assistance on private lands and waters
- bring agencies together to unify and improve the collective federal agency response to this issue
- demonstrate significant economic, environmental, aesthetic, and other benefits of weed control
- address research and management of noxious, non-indigenous, invasive, and poisonous woody and herbaceous plants

FICMNEW is also responsible for:

- identifying the extent and impacts of harmful, non-indigenous plants for the Secretaries of the involved Departments
- making recommendations based on agency needs in order to improve the effectiveness of federal agencies through department cooperation
- presenting yearly progress reports on the status of this problem

In order to carry out the goals of the committee a strategy was established to contain and control harmful non-indigenous plant species. This plan specifies several goals and associated tasks in research, coordination and cooperation, weed management information, environmental interactions, and education (for plan see web-site at the end of the article).

Regarding the topic of research, FICMNEW aims to increase support and coordination for research pertaining to integrated pest management weed control techniques, obtain funding for existing biological control research programs and an herbicide screening and evaluation program, and incorporate research results into management projects.

FICMNEW aims to foster coordination and cooperation to increase the efficiency and effectiveness of weed management programs in part by initiating a weed management advisory program, identifying pilot IPM pilot projects, and reviewing weed management plans with collaborators.

Another planned action is the organization of weed management information for inventory, monitoring, and database management to reduce redundancy, facilitate program planning and inter-program sharing.

Regarding environmental interactions, an economic model to calculate cost/benefits of weed management programs will be developed and the effects of management on weed issues will be included in planning and NEPA processes in order to improve the compatibility of weed management methods and reduce weed impacts.

To foster education, several actions will be taken including the establishment of an education and awareness program including development of a field weed ecology/ management course for field personnel, development of contact lists for congressional members and staff, and briefings will be held for Federal agencies on weed strategy. ❖

For more information contact:
Gary Johnston, DOI, National Park Service, 1849 C Street NW, Washington, DC 20240 (202) 208-5886, email: Gary_Johnston@nps.gov or
Mike Ielmini, U.S Fish and Wildlife Service, Division of Refuges, 4401 N. Fairfax Drive, Arlington, VA 22203, (703) 358-2340, email: Michael_Ielmini@fws.gov or visit the web-page at http://refuges.fws.gov/FICMNEWFiles/FICMNEWHomePage.html

FICMNEW's Accomplishments include:

- Invasive Plants Changing the Landscape of America (Weed Fact Book)
- Distribution of the Weed Fact Book to every member of the House and Senate
- Recognition by the Notable Documents Panel of the American Library Association's Government Documents Round Table for the Weed Fact Book as being a notable government document
- A formal Congressional briefing on the invasive weed problem in the U.S.
- Two Congressional weed tours
- Pulling Together National Strategy for Invasive Plant Management
- Joint production of the Gainesville Database Report
- State invasive species partnerships – over 20 states are now involved
- State Rapid Response Teams formed throughout the U.S.
- Northeastern Regional Invasive Species Council, which includes agencies from 7 states
- Recognition by customers as a key resource for information and assistance on invasive weeds and their appropriate management
- The award-winning FICMNEW web-site hosted by FWS, the homepage of which was recognized as a key resource homepage by *Links 2 Go* http://refuges.fws.gov/FICMNEWFiles/FICMNEWHomePage.html
- A workshop on Early Detection and Rapid Response
- The First Annual National Invasive Weed Awareness Week on the Hill, including establishing a web-site http://www.denix.osd.mil/denix/Public/News/OSD/NIWAW/niwaw.html

Profile The Univ

By: Julie Garvin

The University of California, one of the largest and most acclaimed institutions of higher learning in the world, is dedicated to excellence in teaching, research and public service. The University of California was chartered in 1868 as California's only land grant institution. Today, the university has a $12-billion budget and encompasses 10 campuses, five medical schools and teaching hospitals, three law schools and a state-wide Division of Agriculture and Natural Resources. Also, UC manages three national laboratories for the U.S. Department of Energy.

Marks of Distinction

- Since 1939, UC faculty and researchers have won 40 Nobel Prizes. Current faculty includes 20 Nobel laureates and 300 members of the National Academy of Sciences, more than any other college or university in the United States.
- Academic study areas at UC span more than 150 disciplines, one of the broadest ranges of study of any institute of higher learning in the world.
- More UC academic programs are consistently rated among the top 10 nationally than any other public or private university.
- UC and its three affiliated national laboratories produce more research leading to patented inventions than any other public or private research institution.

Programs

The **Division of Agriculture and Natural Resources** (DANR) brings together nearly 1,100 research scientists and educators on three UC campuses, nine field stations, and 64 Cooperative Extension county offices to develop and deliver practical solutions for local problems. Its purpose is three-fold: teaching, research and extension. Its efforts range from technical farm assistance and water-conservation research to nutrition education for low-income families and pioneering advances in veterinary medicine. The Division's three major components are the Natural Reserve System (NRS), Cooperative Extension (UCCE) and the Agricultural Experiment Station (AES). Other related programs include the UC Integrated Pest Management Program (UC IPM), and Sustainable Agricultural Research and Education Program (SAREP). Homepage: danr.ucop.edu

Natural Reserve System: Founded in 1965, the Natural Reserve System provides researchers from around the world with representative samples of California's diverse terrain and environments. More than 130,000 acres are preserved in 33 NRS sites, ranging from 750 feet below sea level up to 8,500 feet above. Research conducted on the reserves has generated more than 2,300 scientific publications, demonstrating the high value of this unique resource. UC owns only one-fifth of the land, while the rest is managed under cooperative agreements. NRS sites also provide outdoor classroom for university-level teaching and opportunities for many forms of public outreach, including kindergarten-12 field trips. Homepage: nrs.ucop.edu/default.htm

University of California Cooperative Extension: The UC Cooperative Extension is a full partnership of federal, state, county, and private resources linked in applied research and educational outreach. The UC's 64 Cooperative Extension offices are local problem-solving centers. More than 400 campus-based specialists and county-based farm, home, and youth advisors work as teams to bring the University's research-based information to Californians. UCCE tailors its programs to meet local needs. UCCE's many teaching tools include meetings, conferences, workshops, demonstrations, field days, video programs, newsletters and manuals. Thousands of volunteers extend UCCE's outreach, assisting with nutrition and 4-H youth development programs along with Master Gardener, Master Food Preserver, and Master Food Shopper education.

Agricultural Experiment Station: From agronomy to zoology, nearly 700 Agricultural Experiment Station scientists in 60 disciplines form a world-respected team of basic and applied researchers. With more than 1,100 research projects underway at any time, AES scientists seek environmentally sound practices to produce reliable food supplies. Their work contributes substantially to California's vast increases in farming productivity, resulting in safe, abundant, inexpensive food for Californians. AES scientists also teach 8,000 graduate and undergraduate students in the Division's schools-the College of Natural Resources (Berkeley), the College of Natural and Agricultural Sciences (Riverside), and the College of Agricultural and Environmental Sciences and School of Veterinary Medicine (Davis).

UC Integrated Pest Management: Established in 1980, the University of California Statewide Integrated Pest Management Project develops and promotes the use of integrated, ecologically sound pest management programs in California. As defined by UC IPM, integrated pest management is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of

ersity of California

removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment. Homepage: www.ipm.ucdavis.edu/default.html

Sustainable Agricultural Research and Education Program: SAREP provides leadership and support for scientific research and education to encourage farmers, farm workers, and consumers in California to produce, distribute, process and consume food and fiber in a manner that is economically viable, sustains natural resources and biodiversity, and enhances the quality of life in the state's diverse communities for present and future generations. It provides these services through competitive grants, information, and education. Homepage: www.sarep.ucdavis.edu

UC Centers and Programs Instrumental to Invasive Species Issues

The **Weed Resource Information Center (WeedRIC)** is an interdisciplinary collaboration that fosters research in Weed Management and facilitates distribution of associated knowledge for the benefit of agriculture and for the preservation of natural resources. Homepage: wric.ucdavis.edu

The **Information Center for the Environment (ICE)** is a cooperative effort of environmental scientists at the University of California, Davis and collaborators at over thirty private, state, federal, and international organizations interested in environmental protection. ICE hosts the CALWEED database (endeavor.des.ucdavis.edu/weeds) which is an on-line information resource on noxious weeds and invasive species. Homepage: ice.ucdavis.edu

The **UC Davis Weed Science Program** is a research program that focused solely on the study of weeds, weed control, and the effects of weeds on surrounding environments. Homepage: veghome.ucdavis.edu/weedsci/WWW/welcome.html

The **UC Davis Agronomy and Range Science Department** offers undergraduate and graduate level classes in agronomy and range science. The department has workgroups specializing in weed science, as well as yellow starthistle biology and management. It sponsors the California Rangelands Research and Information Center (agronomy.ucdavis.edu/calrng/range1.htm) that is involved with the control and management of barbed goatgrass, perennial peppergrass, and yellow starthistle. Homepage: agronomy.ucdavis.edu/agronomy

A Snapshot of Invasive Species Projects at the UC

UC Cooperative Extension

***Siskiyou County**, Farm Advisor Steve Orloff*

- √ Developed a long-term program for the management of yellow starthistle involving herbicides (Transline™), and competitive plantings of pubescent wheatgrass
- √ Plans to explore control methods for dyer's woad and spotted knapweed

Calaveras County,
Farm Advisor Ken Churches

- √ Is an active member of the Central Sierra Partnership Against Weeds (Weed Management Area)
- √ Holds training classes on the control of invasives, such as yellow starthistle
- √ Received funds for a yellow starthistle abatement program
- √ Set out demonstration trials for the mowing and chemical treatment of yellow starthistle

Sutter/Yuba Counties,
Farm Advisor Glenn Nader

- √ Is an active member of the Sutter/Yuba Weed Management Area
- √ Worked with yellow starthistle plant populations and response to treatments of burning and Transline™
- √ Worked with yellow starthistle and barb goatgrass seed production
- √ Studied the soil and water profile of yellow starthistle

Natural Reserve System- *Susan Harrison, Davis Reserves Manager*

- √ Currently designing a weed management plan for the Reserves
- √ Jepson Prairie Reserve- Performed prescribed burns and grazing, as well as weed mapping
- √ Quail Ridge Reserve- Mapped invasion corridor along roadsides
- √ McLaughlin Reserve- Currently studying barb goatgrass adaptation to serpentine soils

Weed Resource Information Center- *Kitty Schlosser, Program Representative*

- √ Offers Weed and Aquatic Weed School to the public
- √ Provides an interactive web-site with weed information: wric.ucdavis.edu
- √ Acts as a liaison between industry and the University of California

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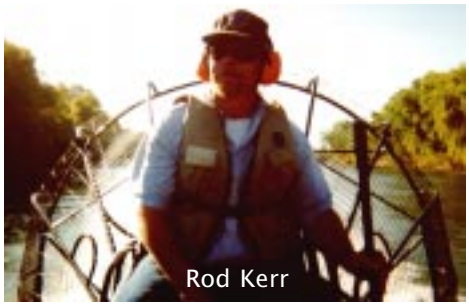
California Department of Food and Agriculture

CDFA District Biologist Profile: *Rod Kerr*

Sacramento East District biologist Rod Kerr actually began his 'weed training' at the tender age of 12 when his father, a Marine aviator, retired and purchased a small ranch in Quartz Valley, Siskiyou County. The ranch had several small patches of leafy spurge and Klamath weed and, between his two brothers, Rod got the lion's share of spraying 2,4-D. He recalls, "Dad tossed in a carrot saying, 'as soon as you get those patches cleared up and get a fence built around the alfalfa, you'll get some flying lessons'." The race was on. At age 15 most of the weed patches were gone and he got to solo an old Cessna off the alfalfa.


Rod Kerr

By the age of 21, Rod had worked his way through Junior College, spending summers with the Forest Service as a grunt fire fighter, working on airplanes at Travis Air Force Base Aeroclub, towing gliders near Vacaville, and a myriad of other jobs. It was about this time when Rod buckled down and, as he put it, "decided to get a 'real' job." With a great stroke of luck and good timing he got on with the Solano County Department of Agriculture as an Agricultural Inspector Trainee.

Rod worked six years with Solano County on weed projects, vertebrate pest projects, insect trapping, urban grid surveys, seed certification and bee inspection. Wanting to finish his degree, he left for CSU Chico with a plan to return to Solano County. A few years later, while working toward a Master's Degree in biological sciences (*limnology*), he was again reminded about a 'real' job.


Klamathweed

A few *more* years later, apple maggot, the "Medfly of the North" had migrated from Oregon and reared its ugly head in northern California. From an Agricultural Inspector II in Yreka, Rod went to an Economic Entomologist in Redding, Agricultural Biologist in Redding and then Associate Agricultural Biologist in Sacramento, where he is currently working as a Weed and Vertebrate Biologist in the Sacramento East District. Rod says, "I knocked on the door of the Apple Maggot Project in May 1984 and...slam bam here I am. Sixteen years has rocketed by and I've enjoyed every minute of it, really."

While many of the invasives have not changed over the millennia, program priorities, budgets and ideologies have changed. It only takes one or two seasons of diversion from an effective treatment program and the battle can be lost outright. Rod believes that the key to weed management is **persistence** in treatment. "To get there and stay there requires a sustained effort, like eternal vigilance for funding, proactive communication with legislators and others, progressive interagency cooperation and so on. The good news is, it's happening. In the last five years or so there has been a big change in invasive weed management. It has become more than the sum of its parts. It's not just here, it's over there in the Tahoe National Forest, in Coeur d'Alene Idaho, in Adelade Australia, ad infinitum. Couple this with an ever increasing array of new tools and technologies and who knows what's just around the corner."

What about the future? Rod's advice, "Hind sight is 20-20 and it is abundantly clear that pennies of prevention are worth 'gigadollars' of cure." A good example is hydrilla. In California, where hydrilla has been detected it has been eradicated or is under an eradication regime. Unfortunately, in States like Florida and Texas, preventative measures and timely action were not taken and now hydril la will be forever relegated to expensive control projects, or no control at all. ❖

A Report from the Western Rangeland Noxious Weeds Workshop: *Weed Management Information Systems, Sept. 6-7, Phoenix, AZ*

Despite its sub-title, this one-and-a-half day workshop was focused on the inventory of weed locations, and the how and why of sharing data. On the first day, a series of presentations covered the federal, state, and private perspectives on data collection for weeds; existing state and federal inventory systems; issues of data and protocol standards; data quality issues; privacy issues; and case studies of a few selected projects. Representing California and the Department of Food and Agriculture, Steve Schoenig presented on the breadth, depth, and diversity of weed activities in California. The second day was devoted largely to break-out discussions of issues: privacy; how to build capabilities at the local level; requirements to share data efficiently and conveniently; and identifying needs for the data, particularly for developing regional efforts in weed management.

A few impressions stood out in the workshop. In general, the need for detailed information about a location (such as owner name, address) decreases as the level of organization moves from local to national. This affects at least two other aspects of sharing information. First, the requirements for sharing useful weed location information are modest, and in general they are easily met by standards such as are being developed by NAWMA (the North American Weed Management Association — www.nawma.org) (see sidebar). Second, the sharing of weed location information should not pose a serious threat to privacy, as it conveys no owner information directly if standards such as NAWMA's are employed. Still, there was agreement among the group that private landowners should be brought in early in the

development of an inventory system, to meet their concerns. Pam Dandrea, records manager for BLM, talked about protecting information about private individuals through the Freedom of Information Act and Privacy Act. This subject is complex and could be the topic of a workshop itself, but apparently a private person can be adequately protected even if more sensitive information were collected. The private landowners in attendance felt that voluntary participation in programs would go a long way towards allaying fears.

Another major topic was exploring ways to collect useful inventory information at the local level, and share it with the wider community. Suggestions included involving schools and youth, providing resources and technical assistance, and developing mapping tools that provide a useful product to the local manager and at the same time capture the information needed by the community.

Although the workshop was initiated by the private, agriculturally oriented Riley Memorial Foundation, most of the roughly 70 attendees represented federal, state, and county agencies from states west of the Mississippi, with a sprinkling of private sector representatives. Besides the Riley Foundation, other sponsors included the Bureau of Land Management (BLM), the US Forest Service, the Packard Foundation, and three agrochemical companies. BLM provided free use of its impressive National Training Center for the conference. ❖

National Invasive Species Plan *continued from page 3...*

ISAC assigned the Working Groups to develop suggestions for action items and supporting discussions in late March 2000. By the first week of May, the Working Groups had returned preliminary drafts, working mostly through conference calls and a Web-based bulletin board. ISAC reviewed the drafts and, in consultation with NISC staff and federal liaisons, the Working Groups considered and incorporated the comments, returning the finalized documents in mid-June. As working documents, the contributions of the Working Groups had a great deal of overlap and lacked an overall structure. NISC staff and their liaisons in Interior and Agriculture (the "writers" as they've come to be known) undertook the daunting task of combining and structuring these diverse contributions. They released the preliminary draft of the Plan on July 13th (this is the version available at the Web site). After five public meetings held across the country, public comment on the preliminary draft closed on July 28th. The Working Group chairs and ISAC met in Seattle on August 2–3 to consider the public comments and provide their own review of the draft.

At this time, the preliminary draft and the comments on it are once again in the hands of the writers, who are preparing the proposed final Plan. The proposed Plan (or the notification of its release) is tentatively scheduled for publication in the Federal Register on September 22nd, 2000. After its release, there will be a 60-day period for public comment and then a 30-day period to analyze and respond to the comments. The goal for the release of the final Plan is December 18th, 2000.

Since March, the National Invasive Species Management Plan has developed rapidly. The process has included a broad sweep of ideas from scientists and others who are interested in many aspects of invasive species, including attempts to deal with them. In developing the Plan, the Working Groups and the ISAC worked through a number of issues that produced some controversy, such as the definition of an invasive species, the protocols for listing them, whether invasive plants actually cause any harm, and the use of chemicals or even biological control agents in the management of invasive species. In general, the Plan incorporates the important points on which there is consensus. Everyone interested in invasive weeds should take a look at the proposed Plan when it appears for comment. Help make sure it is a document that will serve us well and will set the stage for a forceful and dynamic second edition. ❖

NAWMA Mapping and Data Standards (details available at www.nawma.org)

Required Fields

1) Genus
2) Species
3) Date: The date the inventory was conducted.

A COMBINATION OF THE FOLLOWING THREE FIELDS:
4) Infested Area and Unit of Measure (acre or hectare): The same as Net Acres; the total area covered by weed canopy in an infestation site. Can be the only entry if the infestation is a solid stand.
5) Gross Area Unit of Measure (acre or hectare): The boundary for a infestation, presumed to be discontinuous. A separate value showing "infested area" or percent cover must also be entered.
6) Percent Cover: Cover as a percent of the ground covered by foliage of a particular weed species.
7) Ownership: A code for ownership type of land where infestation is located, not names of private landowners.
8) Original Data Source: The owner or manager of the data.
9) Country
10) State or Province
11) County (US FIPS Code)
12) Location — One or more of following:
A) Township, Range, Section, down to ¼ of ¼ of ¼ section
B) Latitude and Longitude
C) UTM, northings and eastings
D) Description of location

Suggested Fields

1) Common name
2) Plant codes: within the United States use PLANTS codes (plants.usda.gov)
3) Quad Number

Optional Fields

1) Quad Name

Profile *Continued...*

UC Davis Weed Science Program-

Joe DiTomaso, Assistant Extension Weed Ecologist

Ramona Robison, Graduate Student

√ Studying cape ivy and its reproductive biology, distribution and ecological aspects in California; currently mapping locations and looking at environmental characteristics

Mark Renz, Graduate Student

√ Researching management options for perennial pepperweed in wetland and wildland areas; looking at control and biology

Jessica Torrence, Graduate Student

√ Performing a large-scale study of yellow starthistle control at Fort Hunter Liggett; focusing on both areas with rare plants and areas under heavy military use

Tracy Jones, Graduate Student

√ Testing forbs and perennial grasses for resistance to invasion by yellow starthistle and annual grasses

Guy Kyser, Staff Research Associate

√ Studied barb goatgrass and impacts of burning on the soil seed bank at the Hopland Research and Extension Center

√ Worked with control of yellow starthistle by burning and Transline™ at three different field sites

√ Measuring soil moisture usage with different densities of yellow starthistle in controlled plots

√ Currently working with biocontrol and Transline™ treatment of yellow starthistle

UC Range and Agronomy Department

Kevin Rice, Professor

√ Currently working on a project with barb goatgrass and its adaptive changes throughout an invasive front

√ Looked at affects of annual grasses on natives

√ Worked with native plants and their resistance to invasion by softchess and yellow starthistle

√ Worked with yellow starthistle and its ecosystem impact, as well as competition with natives

Craig Thomsen, Range Ecologist

√ Project Director of Bear Creek Watershed Restoration Program, a 65,000 acre area of the California Inner Coast Range that contains over 400 species of plants, many of which are endemic to the area. The program's main objective is to control invasive plants including yellow starthistle, tamarisk, perennial pepperweed, medusahead, barb goatgrass, arundo and tree-of-heaven through detection, eradication, and containment. The program is a cooperative between 20 different entities on the county, state, and federal levels and includes private companies, landowners and UC Davis. ❖

™Transline is a Trademark of Dow AgroSciences LLC. Transline is an herbicide that was registered for rangeland use in California, fall of 1997. The Noxious Times does not endorse products mentioned, rather strives to report findings that might be helpful for land managers across the State.

Caulerpa *continued from page 6...*

reached a consensus on operational approaches, and gave the eradication plan the green light. It is also important to note that the California Dept. of Food and Ag., iCal-EPA (DPR), US Fish and Wildlife Service, California Dept. of Fish and Game, National Marine Fisheries Service, State Water Quality Control Board (*San Diego Region*), USDA-Dept. of Agricultural Research Service, California, and University of California, pulled out the stops to get this noxious plant controlled.

Why such urgency? *Caulerpa taxifolia* spread from a few square meters in 1984 off the coast of Monaco, to several thousand square meters within 5 years, and to several thousand hectares today, aggressively crowding out native marine algae with its ex tremely dense "Astroturf-like" growth. As a consequence, normal benthic habitat in these temperature and sub-tropical areas has been severely damaged. The strain that has spread in the Mediterranean can grow 7 cm per day, and with its anchoring stolons and "rhizoids" it is able to establish on substrates ranging from sandy bottoms to rocky shores up to 150 meters deep. On top of this, it is poorly grazed upon by marine herbivores and does not appear to harbor the variety of epiphytes typically found on native eelgrasses. For these reasons, and as a consequence of urging by hundreds of scientists, led by the efforts of Dr. Andrew Cohen (*San Francisco Estuary Institute*), *Caulerpa taxifolia* was placed on the Federal Noxious Weed List in 1999. Thus, with what must be considered ecological foresight, the stage was set for one of the most rapid reactions to an invasive pest in recent years.

What now? The costs for eradication of *Caulerpa taxifolia* in Agua Hedionda Lagoon will approach $1 million, which includes local post-treatment monitoring. Some funds have been obtained from "emergency" sources, but there needs to be a significant and sustained funding of about $3.5 million for broader surveys, monitoring, public education and outreach to ensure that this invader doesn't get a foothold in the US. Additionally, research gaps on the plant's biology, reproduction, ecology, and control will require about $1 million for short and long-term projects. With much of the Southern California coast and the southern East Coast susceptible to invasion, as well as Mexico, the stakes are high. (*Note: Another, smaller infestation has been detected in Hunting Harbor, CA and eradication plans are in the final stages.*) Let's hope that the rapid responses to date can be matched by equally timely support for surveys and research so that the *Caulerpa* scourge can be halted, as the French say "À toute vitesse!" ❖

For more information, log on to the following web-sites:
http://swr.ucsd.edu/hcd/caulerad.htm
http://www.anstaskforce.gov/Caulerpa.htm
http://www.sbg.ac.at/ipk/avstudio/pierofun/ct/caulerpa.htm

Change-in-Address or Add a Friend

If you have a change to make to your address as it appears on the label, or if you would like to add a colleague to our mailing list, please fill out and send in this information: Name, Organization, Address, City, State, Zip
Please mail to: CDFA attn: Noxious Times, 1220 N St., Room A-357, Sacramento, CA 95814

Need Fish, Wildlife, Plant, Habitat or Technical Training? National Conservation Training Center Courses May Fit You

By: Scott M. Stenquist

The U.S. Fish and Wildlife Service's National Conservation Training Center in Sheperdstown, West Virginia may have a course just right for your training niche. NCTC courses serve U.S. Fish and Wildlife Service employees, other conservation-related employees, and also people from associated fields, including non-profit organizations. Training courses and seminars are open to all, first-come, first-served. College credits are usually offered for each course. Tuition, per diem, and travel expenses are the responsibility of each student's employer, though tuition fees are waived for some students (there are no tuition fees for U.S. Fish and Wildlife Service employees). Lodging and meals, including day-care, are provided on site at the training center, located just 75 miles northeast of Washington, DC in the small community of Shepherdstown, WV. Most students using air transportation find Dulles International Airport convenient.

Over 30,000 people have used the facilities to broaden and hone their natural resource knowledge and skills since NCTC opened in October, 1997. Fish and wildlife professionals come to learn and share the latest techniques in their fields of expertise -- everything from geographic information systems, population dynamics, and conservation biology to fish and wildlife health and management techniques. They also come to learn non-technical, but equally important, "people skills", from consensus-building to leadership. People from government, non-profit environmental organizations, and industry come to NCTC to learn from one another, to share their perspectives and differences, and to try to find the "common ground" that will allow them to build bridges for resource conservation.

New Course: Integrated Approach to Invasive Species Management

This 2 semester-hour credit course "Integrated Approach to Invasive Species Management, FIS 1190," was offered for the first time on August 28th through Sept. 1st at the NCTC Shepherdstown campus. Speakers included invasive species specialists, pest and weed management practitioners, and noted researchers from Colorado State University, Montana State University, Colorado Department of Agriculture, Montana Department of Agriculture, Florida Department of Environmental Protection, U.S. Department of Agriculture-Forest Service, U.S. Department of Interior-Geological Survey and -Fish and Wildlife Service. The course presented concepts and tools necessary to develop a strategy and implement an effective program for managing invasive species while coordinating such activities across programs, agencies, and jurisdictions in ecosystems. There was no tuition charge for this course. Further contact: Mr. Chris Horsch, Aquatic Resources, National Conservation Training Center, U.S. Fish and Wildlife Service, Shepherdstown, WV (304-876-7445 or e-mail: chris_horsch@fws.gov).

Distance Learning Courses Beat the Travel Requirement

The U.S. Fish and Wildlife Service's Conservation Training Center also offers distance learning courses, including Managing Difficult People, Employee Security and Safety, and Department of the Interior Ethics Training. See the web site for more information: http://training.fws.gov/dl/sch_events.htm

Can Special Courses Be Presented On Campus or In My Geographic Area?

Other courses can be tailored to specific needs. Contact NCTC for further details. Also, see: http://www.nctc.fws.gov/nwsevnt.html ❖

Integrated Approach to Invasive Species Management (FIS 1190) at NCTC

Topics

- Introduction: Invasives, Biodiversity, and Ecosystems
- What is "Integrated Management" and Why is It Important?
- Application of Integrated Principles to Strategy Development and Program Implementation
- Planning: Considerations and Elements
- Plan Development
- Research: Considerations and Priorities
- Current Laws, Regulations, and Policies that Influence Invasive Species Management

Details: Mr. Chris Horsch, 304-876-7445 http://www.nctc.fws.gov/catalog/fis1190.html

National Conservation Training Center (NCTC) U.S. Fish and Wildlife Service, Rt.1, Box 166, Shepherds Grade Road, Shepherdstown, WV 25443-9713 304-876-7472 http://www.nctc.fws.gov/

Scott M. Stenquist is the regional integrated pest and weed management coordinator, U.S. Fish and Wildlife Service, Pacific Region (National Wildlife Refuges), 911 N.E.11th Ave., Portland, OR 97232-4181 (503-231-6172; email: scott_stenquist@fws.gov).

Upcoming Events:

Oct. 14-15th and 21st, 2000
Jepson Herbarium Classes: Basic Botany
Life Sciences Building, UC Berkeley
Taught by John McMurray. For more information please call Staci Markos or Betsy Ringrose at (510) 643-7008 or email smarkos@socrates.berkeley.edu

Oct. 17-18th, 2000
Aquatic Weed School
Heidrick Ag Center, Woodland, CA
Focuses on issues associated with developing weed management strategies in a variety of aquatic ecosystems. Course fee is $300 including course materials and lunches. On-line registration now available at http://wric.ucdavis.edu/education/aquaticweedschool00.htm

Oct. 24th, 2000
Statewide WMA Meeting
Heidrick Ag Center, Woodland, CA
For more information see article on page 2 of this issue.

Oct. 28-29th, 2000
Jepson Herbarium Classes: Aquatic Plants
Life Sciences Building, UC Berkeley
Taught by Barbara Ertter. For more information please call Staci Markos or Betsy Ringrose at (510) 643-7008 or email smarkos@socrates.berkeley.edu

Nov. 9-12th, 2000
California Association of Resource Conservation Districts Annual Conf.
Doubletree hotel, San Jose, CA
Practical training workshops, feedback sessions, as well as displays on resource issues and programs will be featured.

Nov. 17-18th, 2000
CSUMB Weed Symposium
For more information contact Jack Massera at jmassera@worldnet.att.net

Dec. 2nd, 2000
Friends of the Biological Sciences Herbarium Workshop: Introduction to Keying *Carex*
Holt Hall, Room 129, CSU Chico
Taught by Lawrence Janeway. Gain experience keying individuals in the *Carex* genus, the largest in California. $45 fee ($35 for members) For more information call the Herbarium at (530) 898-5381.

Jan 8-10th, 2001
53rd California Weed Science Society Conf.
Doubletree Hotel, Monterey, CA
"Water, Weeds and You!" More information available at www.cwss.org

Jan. 27th, 2001
CINWCC Meeting
Forest Service Regional Office, Mare Islands, Vallejo, CA

Mar. 15-16th, 2001
International Knapweed Symposium
Coeur d'Alene, ID
More information at www.sidney.ars.usda.gov/knapweed

April 16-20th, 2001
George Wright Society Biennual Conf.
Denver Marriott City Center, Denver, CO
"Crossing Boundaries in Park Management: On the Ground, In the Mind, Among Disciplines" More information available at www.georgewright.org/2001.html

View the latest newsletter at the *Noxious Times* web-site BEFORE it arrives in your mailbox!
www.cdfa.ca.gov/noxioustimes

Resources and Publications

Invasive Plants of California's Wildland

A great NEW resource is finally here! Edited by Carla C. Bossard, John M. Randall, and Marc C. Hoshovsky, this book provides specific information about the biology and control of 78 non-native plant species listed by CalEPPC as being of the greatest ecological concern. Includes detailed photos and drawings to aid in identification. This new resource is currently available for $30 paperback, $60 hardback. For more information go to http://www.ucpress.edu/books/pages/9109.html

California Interagency Noxious Weed Coordinating Committee
Noxious Times
1220 N Street, Room A-357
Sacramento, CA 95814

return services requested